

AMENDMENTS TO THE CLAIMS

1.(Previously Presented) A process for producing an epitaxial layer of gallium nitride (GaN) comprising:

forming on a surface of a substrate, a film of a silicon nitride of between 5 to 20 monolayers, functioning as a micro-mask;

depositing a continuous gallium nitride layer on the silicon nitride film at a temperature ranging from 400 to 600°C;

after depositing the continuous gallium nitride layer, annealing the continuous gallium nitride layer at a temperature ranging from 950 to 1120°C; and

performing an epitaxial regrowth with continuous gallium nitride layer at the end of a spontaneous *in situ* formation of islands of gallium nitride.

2.(Original) A process according to claim 1, wherein the substrate is selected from the group consisting of sapphire, ZnO, 6H-SiC, 4H-SiC, 3C-SiC, LiAlO₂, LiGaO₂, MgAlO₄, Si, GaAs, AlN, ZrB₂ and GaN.

3.(Previously Presented) A process according to claim 1, wherein the silicon nitride film is a layer of the Si_xN_y type.

4.(Original) A process according to claim 1, wherein the temperature of depositing the continuous gallium nitride layer ranges from 450 to 550°C.

5.(Previously Presented) A process according to claim 1, wherein the temperature of annealing the continuous gallium nitride layer ranges from 1050 to 1080°C.

6.(Previously Presented) A process according to claim 1, wherein the temperature of depositing the continuous gallium nitride layer ranges from 450 to 550°C and the temperature of annealing the continuous gallium nitride layer ranges from 1050 to 1080°C.

7.(Previously Presented) A process according to claim 1, wherein the deposition of silicon nitride film is carried out with a carrier gas containing H₂.

8.(Previously Presented) A process according to claim 1, wherein the silicon nitride film is a layer of the Si_xN_y type and wherein forming the film of silicon nitride comprises reacting ammonia and silane.

9.(Previously Presented) A process according to claim 1, wherein the temperature of depositing the continuous gallium nitride layer ranges from 450 to 550°C and the temperature of annealing the continuous gallium nitride layer ranges from 1050 to 1080°C, wherein the deposition of silicon nitride film is carried out with a carrier gas containing H₂, and wherein the silicon nitride film is a layer of the Si_xN_y type and wherein forming the film of silicone nitride comprises reacting ammonia and silane.

10.(Previously Presented) A process according to claim 1, wherein the epitaxial regrowth is carried out using gallium nitride doped with a dopant chosen from the group consisting of magnesium, zinc, cadmium, beryllium, calcium, silicium, oxygen, tin, germanium and carbon.

11-20.(Cancelled)